Service
Service
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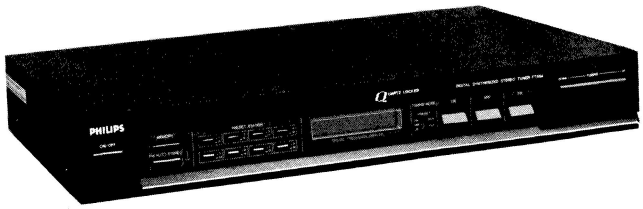

Service Manual

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(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni orignali e che siano utilizzati pezzi di ricambiago identici a quelli sepecificati.

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'orgine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Serviçio

PHILIPS

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

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PHILIPS
Published by Consumer Electronics

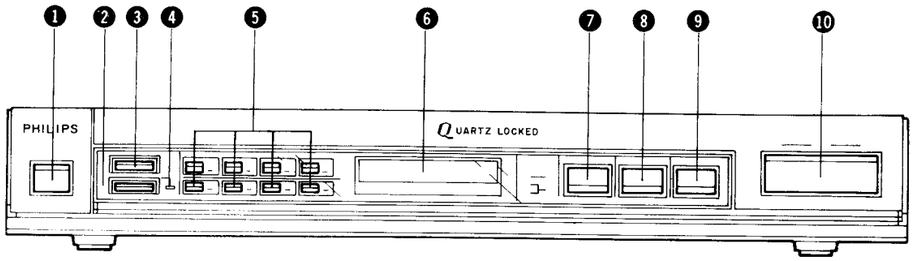
CS 3 400

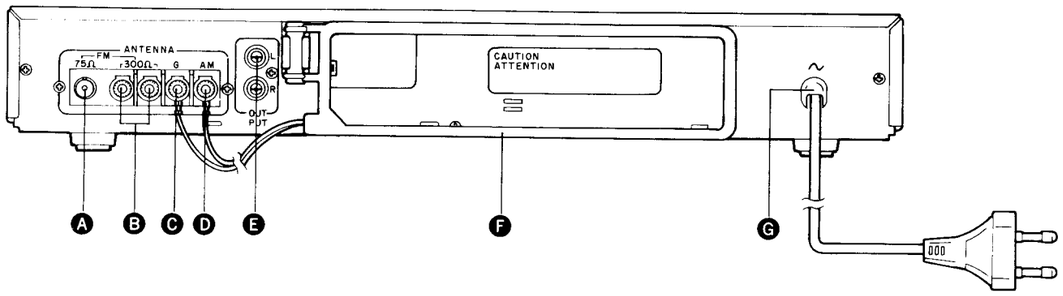
SPECIFICATION

		Nominal value	Typical value
General			
Mains voltage		: 220–240 V~	: 220–240 V~
Mains frequency		: 50–60 Hz	: 50–60 Hz
Power consumption		: 13 W max.	: 13 W max.
Dimensions (W×H×D)		: 420×60×260 mm	: 420×60/66×260 mm
Weight		: 3.0 kg	: 3.0 kg approx
Tuner: FM section			
Tuning range		: 87.5 MHz to 108.0 MHz	: 87.5 MHz to 108.0 MHz
Aerial inputs		: 75 Ω coaxial	: 75 Ω coaxial
		: 300 Ω symmetrical	: 300 Ω symmetrical
Sensitivity	mono	: 4.0 µV 3% Distortion	: 1.3 µV 26 dB S/N
Selectivity		: 50 dB at ± 300 kHz bandwidth	: 60 dB at ± 300 kHz bandwidth
Frequency response	30 Hz – 15 kHz	: + 1.0, – 3.0 dB	: +0.5, – 2.0 dB
Suppression	IF-AM	: 70 dB – 45 dB	: 80 dB – 55 dB
	pilot tone	: 27 dB	: 32 dB
	image frequency	: 65 dB	: 75 dB
Channel separation		: 38 dB 1 kHz	: 45 dB 1 kHz
Distortion T.H.D.	mono	: 0.4%	: 0.2%
	stereo	: 1.0%	: 0.5%
Signal/noise ratio	mono	: 71 dB	: 76 dB
	stereo	: 63 dB	: 68 dB
Output		: 350 – 700 mV ⩽ 3.3 kΩ	: 1000 mV
Tuner: AM section			
Wave ranges	MW	: 531 kHz to 1602 kHz	: 531 kHz to 1602 kHz (585-187 m)
	LW	: 153 kHz to 281 kHz	: 153 kHz to 281 kHz (1960-1067 m)
Sensitivity	MW	: 30 µV 10% Distortion	: 30 µV 10% Distortion
	LW	: 300 µV 10% Distortion	: 200 µV 26 dB S/N
Selectivity	(Loop antenna)	: 20 dB at ± 9 kHz bandwidth	: 30 dB at ± 9 kHz bandwidth
Suppression	IF (Loop antenna)	: 50 dB	: 60 dB
	image frequence (Loop antenna)	: 35 dB	: 35 dB
Output	(Loop antenna)	: 200 – 400 mV ⩽ 3.3 kΩ	: 300 mV
Tuner: Digital section			
Tuning steps	FM/MW/LW	: 50 kHz/9 kHz/1 kHz	: 50 kHz/9 kHz/1 kHz
Presets	FM/MW+LW	: 16/8 random sequential	: 16/8 random sequential

Caution ⚡ 220 V/240 V

Removal of upper cabinet and recordplayer exposes the protruding corrent-carrying parts of mains switch and mains transformer, therefore extreme care should be taken when the apparatus is connected to the mains.





CONNECTIONS AND CONTROLS

1	Mains switch	SU01	A	FM antenna terminal 75Ω	JC01
2	FM auto stereo switch	SX10	B	FM antenna terminal 300Ω	
3	Memory switch	SX09	C	Ground	
4	FM auto stereo indicator	DX01	D	AM antenna terminal	
5	Preset station switch	SX01-SX08	E	Output	JC02
6	Display	V501	F	Loop antenna	L051
7	LW switch	SY13	G	Mains cord	W001
8	MW switch	SY10			
9	FM switch	SY12			
10	Tuning Up/Down switch	SY04, SY14			

Carbon film 0.125 W or 0.2 W	70°C	5%	
Carbon film 0.25 W or 0.33 W	70°C	5%	
Metal film 0.25 W or 0.33 W	70°C	5%	
Carbon film 0.5 W	70°C	5%	
Carbon film 0.67 W	70°C	5%	
Carbon film 1 W or 1.15 W	70°C	5%	
Ceramic plate Tuning ⩽ 120 pF NP.0		2%	
Others		−20/+80%	
Polyester flat foil		10%	
Metalized polyester flat film		10%	
Polyester flat foil small size (Mylar)		10%	
Polysterene film/foil		1%	
Tubular ceramic			
Miniature single			
Subminiature tantalum		± 20%	

(C) Chip component

*a = 2.5 V
b = 3.15 V or 4 V
c = 6.3 V
d = 10 V
e = 16 V
f = 25 V
g = 40 V
h = 63 V
j = 100 V
l = 125 V
m = 150 V
n = 160 V
q = 200 V
r = 250 V
s = 300 V
t = 350 V
u = 400 V
v = 500 V
w = 630 V
x = 1000 V
A = 1.6 V
B = 6 V
C = 12 V
D = 15 V
E = 20 V
F = 35 V
G = 50 V
H = 75 V
I = 80 V

ADJUSTMENTS

- Inner adjustment of the FM front end pack (A101) of this unit is difficult. (IF, RF, OSC)
- Inductances of the MW OSC coil (LA02) and LW OSC coil (LA04) are preset. Therefore, please do not turn the cores of these coils.

FM-Distortion

SK... WAVE RANGE SWITCH	SIGNAL	TO	DISPLAY TUNE IN	DETUNE	ADJUST	OSCILLOSCOPE	INDICATOR
FM SY12	98 MHz Mod. 1 kHz Δf 40 kHz (Mono)	JC01			L201 (Brown)		J201 ±0 mV
					L201 (White)		JC02 Distortion Min.
	98 MHz Mod. 1 kHz Δf L+R 40 kHz Pilot 6 kHz				A101-L8 L201		

Stereo Separation

FM SY12	98 MHz Mod. 1 kHz Δf L+R 40 kHz Pilot 6 kHz	JC01			R307		JC02 Separation Max.

Muting Level

FM SY12 Mode Switch Auto SX10 (Auto LED ON)	98 MHz Mod. 1 kHz Δf 40 kHz Output 12.5 μV	JC01			R219		JC02 [1]

AM-IF

MW SY10	999 kHz Mod. 400 Hz 30% Low Output	L051			FA01		JC02 Output Max.

AM-RF

MW SY10							
LW SY13							

AM Auto Stop

MW SY10							

[1] By turning R2 JC02, and the that the wave
[2] Set RA13 at (V501) starts The adjustme out after adjus

ADJUSTMENTS LO

P102

end pack (A101) of

LA02) and LW OSC
lease do not turn the

TO	DISPLAY TUNE IN	DETUNE	ADJUST	OSCILLOSCOPE	INDICATOR
			L201 (Brown)		J201 ±0 mV
C01			L201 (White)		JC02 Distortion Min.
			A101-L8 L201		
C01			R307		JC02 Separation Max.
C01			R219		JC02 [1]
51			FA01		JC02 Output Max.

AM-RF

MW SY10	603 kHz	L051			LA01		JC02 Output Max.
	1404 kHz				CA01		
LW SY13	173 kHz	L051			LA03		JC02 Output Max.
	272 kHz				CA08		

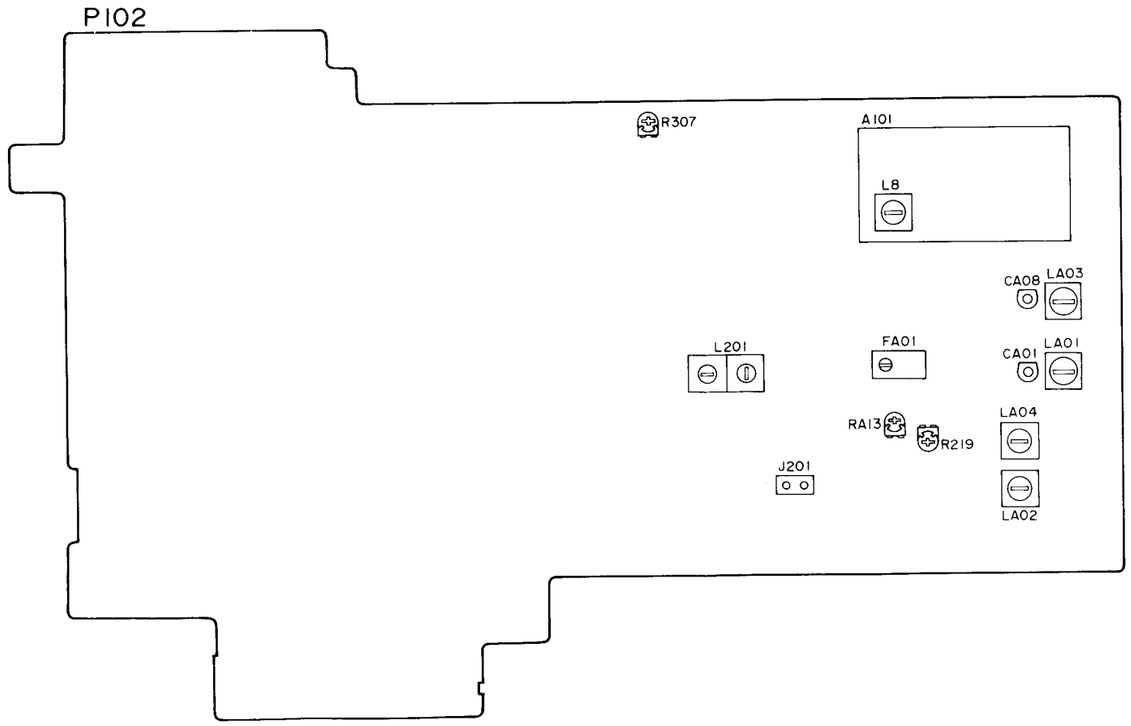
AM Auto Stop

MW SY10	999 kHz Mod. 400 Hz 30% Output 500 μV/m	L051			RA13		JC02 [2]

[1] By turning R219, clear once the output wave form of JC02, and then adjust it by turning a little R219 so that the wave form comes out again.

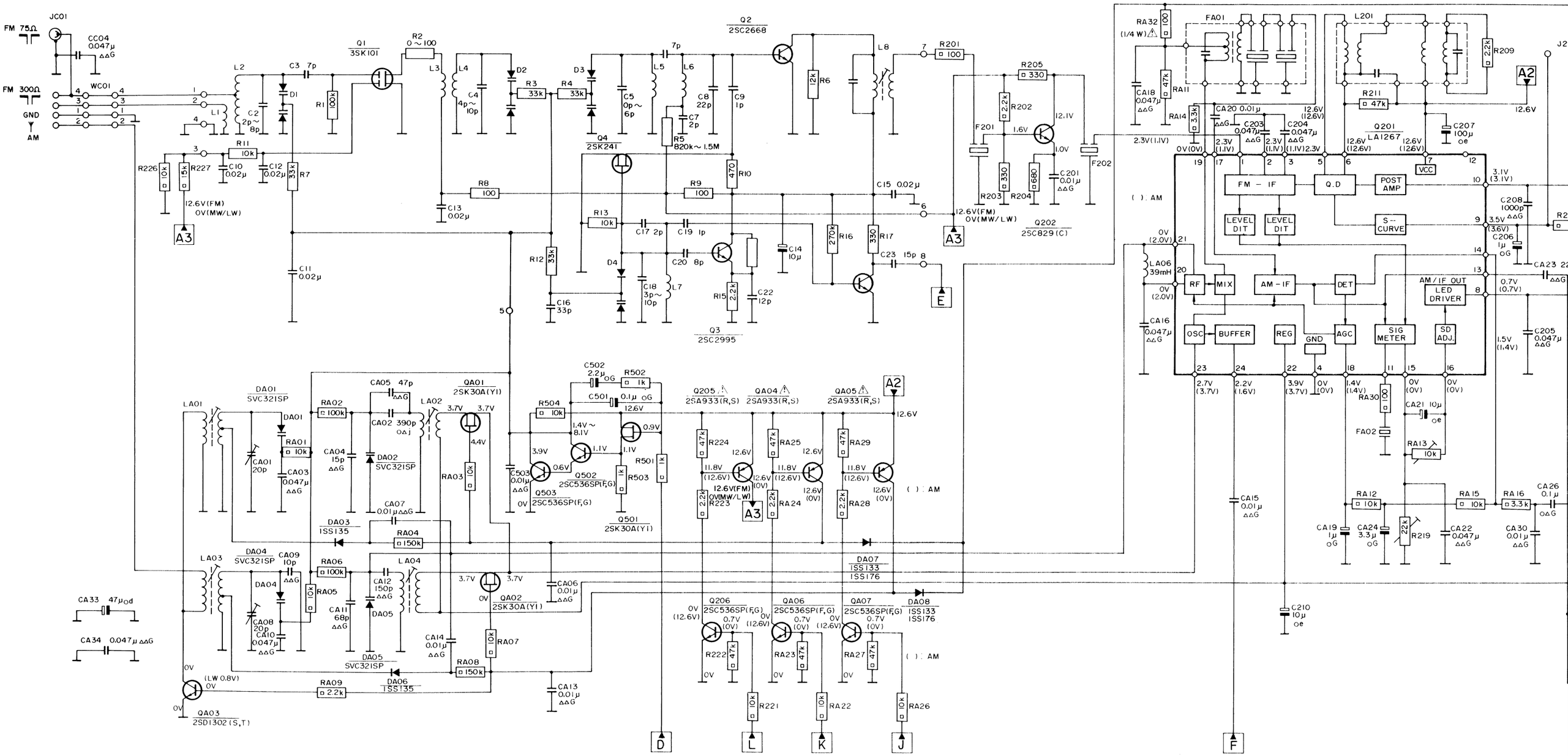
[2] Set RA13 at the point in which "TUNED" of display (V501) starts lighting up.
The adjustment of AM Auto Stop should be carried out after adjusting FM Muting Level.

ADJUSTMENTS LOCATION



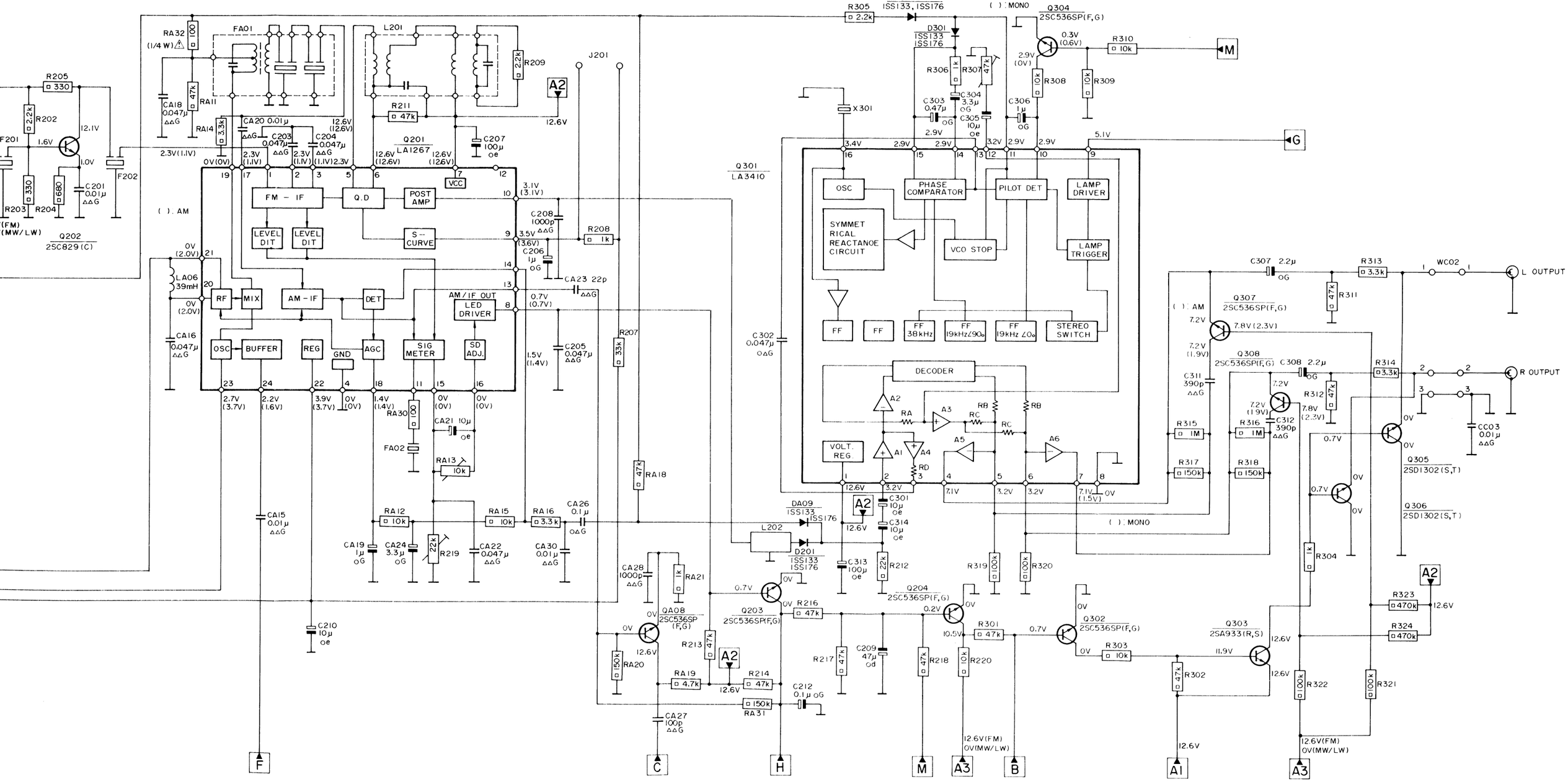
SCHEMATIC DIAGRAM

R	R226 R227 R11 R7 R1 R2 R8 R3 R12 R4 R13 R5 R9 R10 R15 R6 R16 R17 R201 R202 ~ R205 RA32 RA11 RA14 R211 R209 R208 RA01 RA05 RA02 RA06 RA09 RA04 RA03 RA08 RA07 R504 R503 R502 R501 R224 R223 R222 R25 R221 RA24 RA23 RA29 RA22 RA28 RA26 RA27 RA12 RA30 R219 RA13 RA15 RA16
C	CC04 C10 C2 C12 C11 C3 CA12 CA07 C13 C4 C16 C5 C17 C18 C20 C19 C7 C8 C9 C22 C14 C15 C23 C201 CA18 CA16 CA20 C203 C204 C207 C206 C208 CA23 CA33 CA34 CA08 CA01 CA10 CA03 CA09 CA04 CA11 CA05 CA02 CA14 C503 CA06 CA13 C502 C501 CA15 C210 CA19 CA24 CA21 CA22 CA30 CA26
Q - D	QA03 DA04 DA01 D1 DA03 DA05 DA02 Q1 DA06 QA01 QA02 D2 Q503 Q502 Q501 D3 Q4 D4 Q205 Q3 Q206 QA04 Q2 QA06 QA05 DA07 QA07 DA08 Q202 Q201
L - X - F	LA01 LA03 L1 L2 LA04 LA02 L3 L4 L5 L7 L6 L8 F201 F202 LA06 FA01 L201 FA02



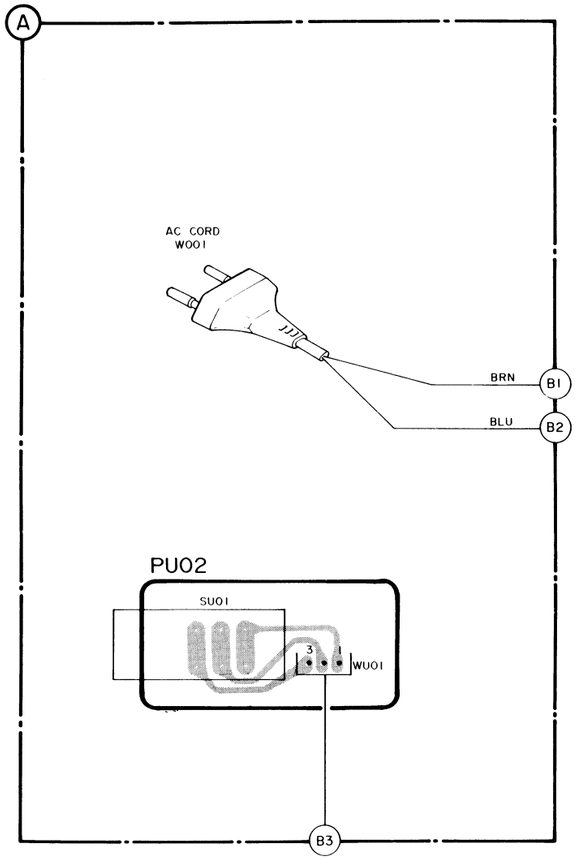
SCHEMATIC DIAGRAM

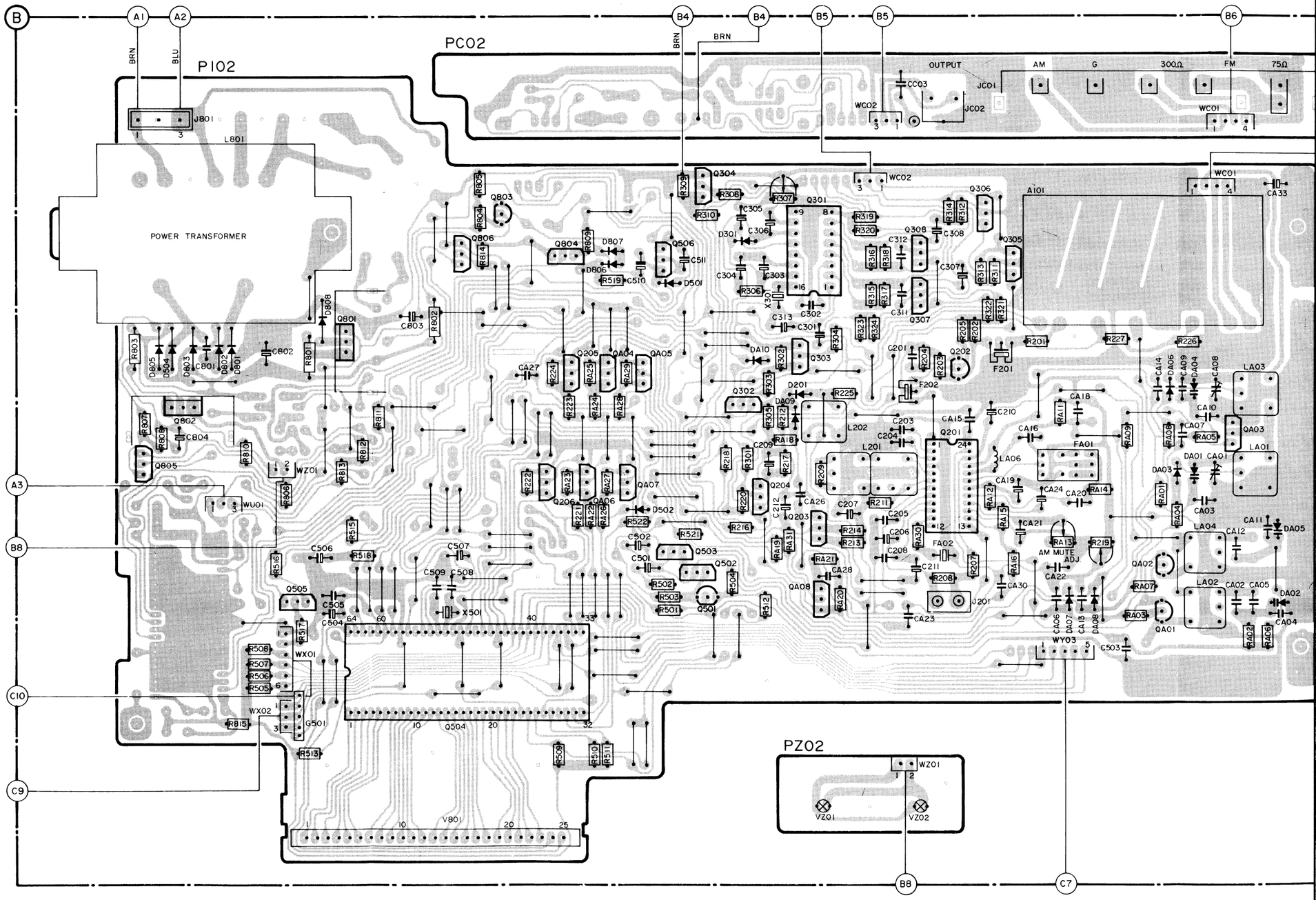
202 ~ R205 RA32 RA11 RA14 R211 R209 R208 R207 RA18 R305 R306 R307 R308 R309 R310 R315 R316 R311 R312 R313 R314	R
3 RA26 RA27 RA12 RA30 R219 RA13 RA15 RA16 RA20 RA19 RA21 R213 R214 RA31 R216 R217 R212 R218 R220 R301 R319 R320 R303 R302 R317 R318 R304 R322 R321 R323 R324	
C201 CA18 CA16 CA20 C203 C204 C207 C206 C208 CA23 C205 C302 C303 C304 C305 C306 C311 C307 C312 C308	C
CA15 C210 CA19 CA24 CA21 CA22 CA30 CA26 CA28 CA27 C212 C313 C209 C301 C314 CC03	
Q202 Q201 QA08 Q301 Q203 DA09 D201 DA10 D301 Q204 Q304 Q302 Q307 Q303 Q308 Q306 Q305	Q - D
F201 F202 LA06 FA01 L201 FA02 L202 X301	L - X - F



P.C.BOARDS AND WIRING CONNECTION

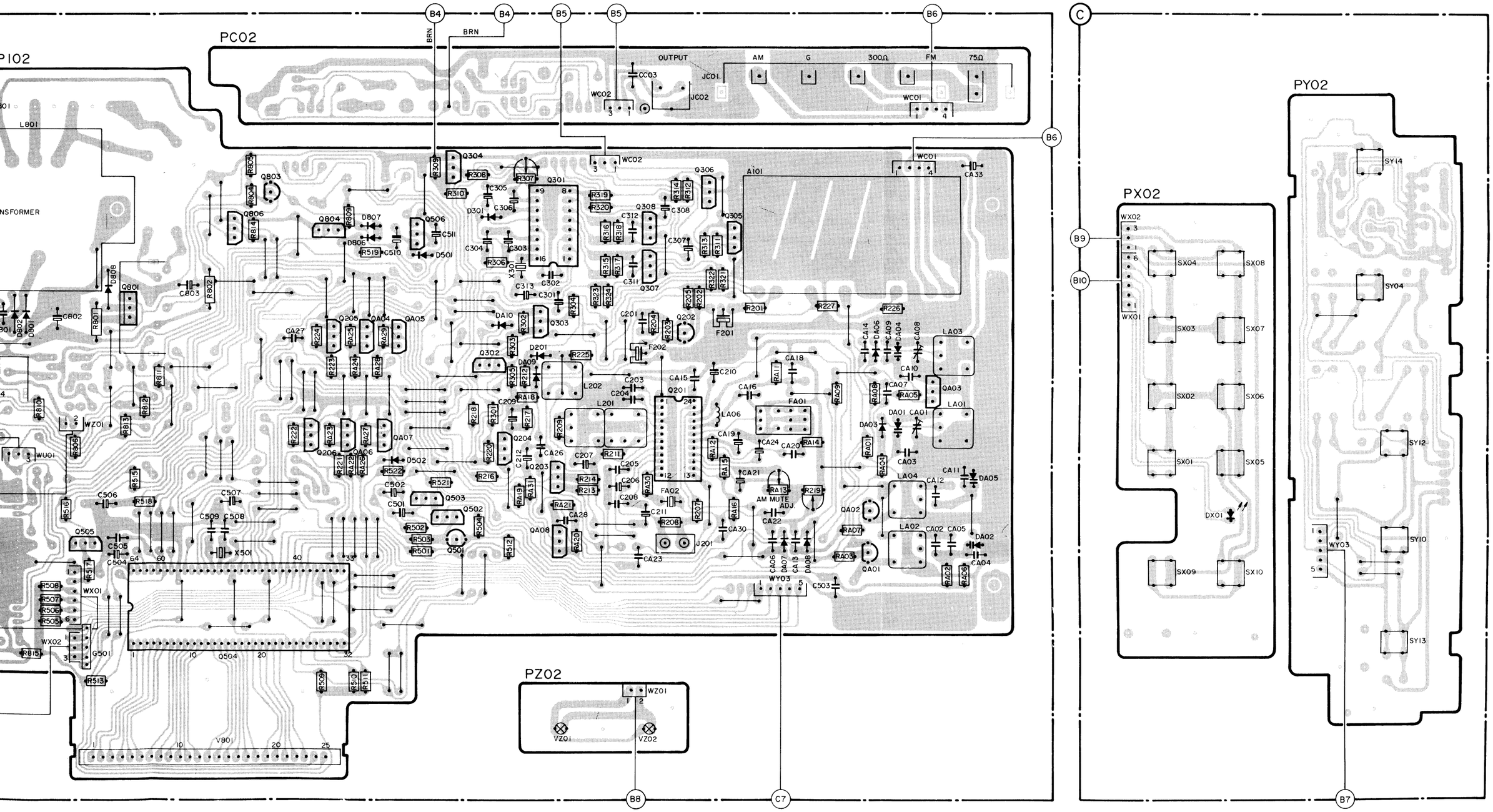
R - G	R803 R807 R808 R810 R806 R801 R811 ~ R813 R802 R805 R804 R814 R221 ~ R224 R809 R519 RA22 ~ RA29 R306 ~ R310 RA18 R302 ~ R305 R225 R315 ~ R320 R323 R324 R311 ~ R314 R201 ~ R205 R321 R322 R227 RA01 RA04 R226 RA09 RA0
	G501 R815 R505 ~ R508 R516 R517 R513 R515 R518 R509 ~ R511 R501 ~ R503 R521 R504 R512 R281 R301 R220 R216 R217 RA19 RA31 RA21 RA20 R207 ~ R209 R211 ~ R214 RA30 RA11 ~ RA16 R219 RA07 RA03
C	C804 C801 C802 C803 CA27 C510 C511 C301 ~ C306 C313 CC03 C312 C311 C308 C307 CA15 C210 CA30 CA16 CA19 ~ CA22 CA18 CA14 CA09 CA07 C
	C504 ~ C506 C507 ~ C509 C502 C501 C209 C212 CA26 CA28 C211 CA23 C201 C203 ~ C208 CA24 CA06 CA13 C503 CA12 CA
Q - D - V	D801 ~ D805 Q805 Q802 Q505 D808 Q801 V801 Q806 Q803 Q504 Q804 Q205 Q206 QA04 ~ QA07 Q506 Q501 ~ Q503 Q304 Q302 Q303 Q204 Q203 QA08 Q301 D807 D806 D502 D501 D301 DA10 DA09 D201 VZ01 VZ02 Q305 ~ Q308 Q202 Q201 D
L - S - F - X	SU01 L801 X501 X301 L202 L201 F202 FA02 F201 LA06 FA01 LA04 LA02 LA03 LA01





P.C.BOARDS AND WIRING CONNECTION

R810 R806 R801 R811 ~ R813 R802 R805 R804 R814 R221 ~ R224 R809 R519 RA22 ~ RA29 R306 ~ R310 RA18 R302 ~ R305 R225 R315 ~ R320 R323 R324 R311 ~ R314 R201 ~ R205 R321 R322 R227 RA01 RA04 R226 RA09 RA08 RA05	R - G
R815 R505 ~ R508 R516 R517 R513 R515 R518 R509 ~ R511 R501 ~ R503 R521 R504 R512 R281 R301 R220 R216 R217 RA19 RA31 RA21 RA20 R207 ~ R209 R211 ~ R214 RA30 RA11 ~ RA16 R219 RA07 RA03 RA02 RA06	
C802 C803 CA27 C510 C511 C301 ~ C306 C313 CC03 C312 C311 C308 C307 CA15 C210 CA30 CA16 CA19 ~ CA22 CA18 CA14 CA09 CA07 CA10 CA08 CA01 CA03 CA11 CA33	C
C504 ~ C506 C507 ~ C509 C502 C501 C209 C212 CA26 CA28 C211 CA23 C201 C203 ~ C208 CA24 CA06 CA13 C503 CA12 CA02 CA05 CA04	
Q505 D808 Q801 V801 Q806 Q803 Q504 Q804 Q205 Q206 QA04 ~ QA07 Q506 Q501 ~ Q503 Q304 Q302 Q303 Q204 Q203 QA08 Q301 D807 D806 D502 D501 D301 DA10 DA09 D201 VZ01 VZ02 Q305 ~ Q308 Q202 Q201 DA07 DA08 DA03 DA06 DA01 DA04 QA01 ~ QA03 DA02 DA05 DX01	Q - D - V
L801 X501 X301 L202 L201 F202 FA02 F201 LA06 FA01 LA04 LA02 LA03 LA01 SX01 ~ SX10 SY13 SY14 SY04 SY12 SY10	L - S - F - X



SCHEMATIC DIAGRAM

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SCHEMATIC DIAGRAM

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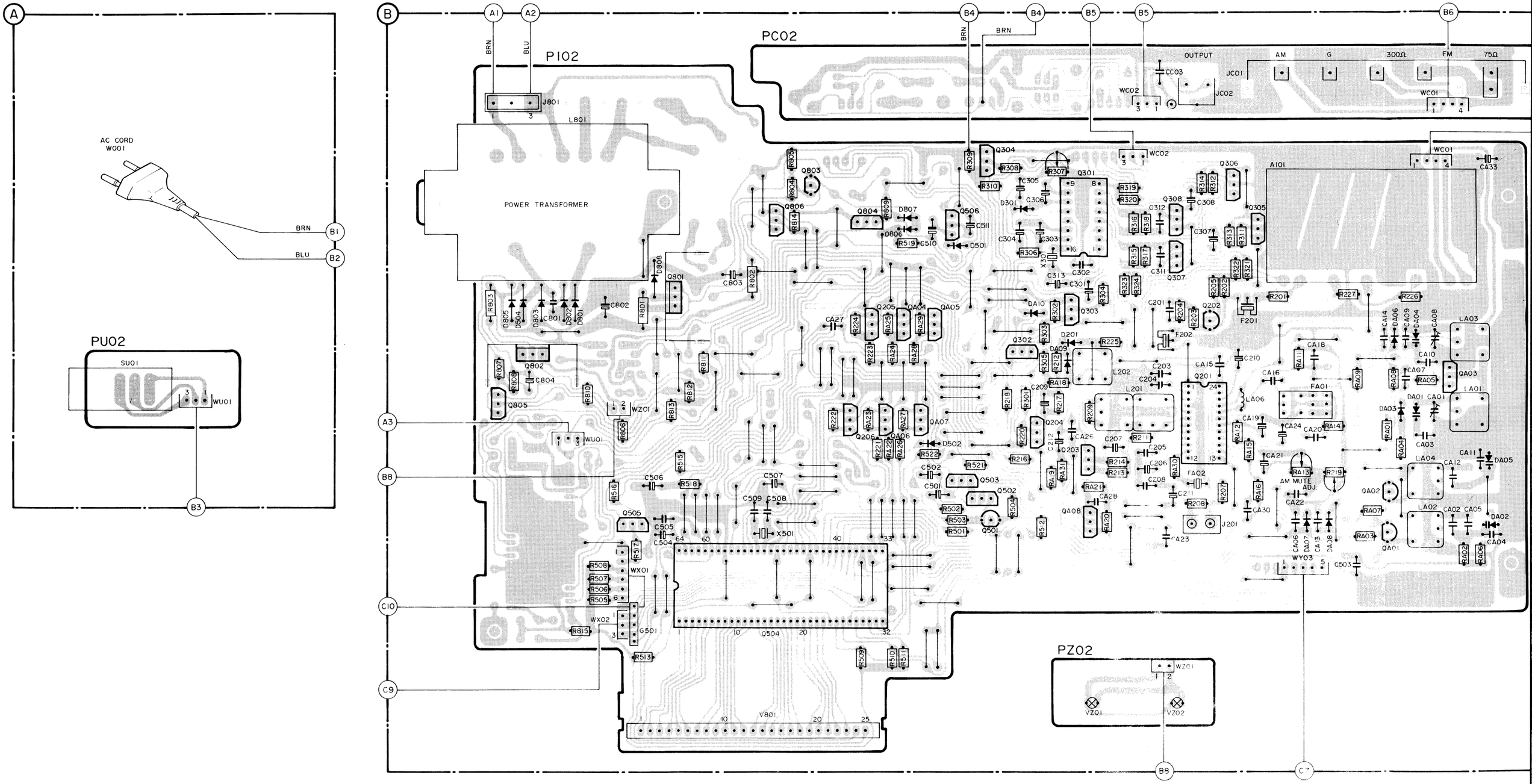
P.C.BOARDS AND WIRING CONNECTION

R - G	R803 R807 R808 R810 R806 R801 R811 ~ R813 R802 R805 R804 R814 R221 ~ R224 R809 R519 RA22 ~ RA29 R306 ~ R310 RA18 R302 ~ R305 R225 R315 ~ R320 R323 R324 R311 ~ R314 R201 ~ R205 R321 R322 R227 RA01 RA04 R226 RA09 RA08 R G501 R815 R505 ~ R508 R516 R517 R513 R515 R518 R509 ~ R511 R501 ~ R503 R521 R504 R512 R281 R301 R220 R216 R217 RA19 RA31 RA21 RA20 R207 ~ R209 R211 ~ R214 RA30 RA11 ~ RA16 R219 RA07 RA03 R
C	C804 C801 C802 C803 CA27 C510 C511 C301 ~ C306 C313 CC03 C312 C311 C308 C307 CA15 C210 CA30 CA16 CA19 ~ CA22 CA18 CA14 CA09 CA07 CA C504 ~ C506 C507 ~ C509 C502 C501 C209 C212 CA26 CA28 C211 CA23 C201 C203 ~ C208 CA24 CA06 CA13 C503 CA12 CA0
Q - D - V	D801 ~ D805 Q805 Q802 Q505 D808 Q801 V801 Q806 Q803 Q504 Q804 Q205 Q206 QA04 ~ QA07 Q506 Q501 ~ Q503 Q304 Q302 Q303 Q204 Q203 QA08 Q301 D807 D806 D502 D501 D301 DA10 DA09 D201 VZ01 VZ02 Q305 ~ Q308 Q202 Q201 DA0
L - S - F - X	SU01 L801 X501 X301 L202 L201 F202 FA02 F201 LA06 FA01 LA04 LA02 LA03 LA01



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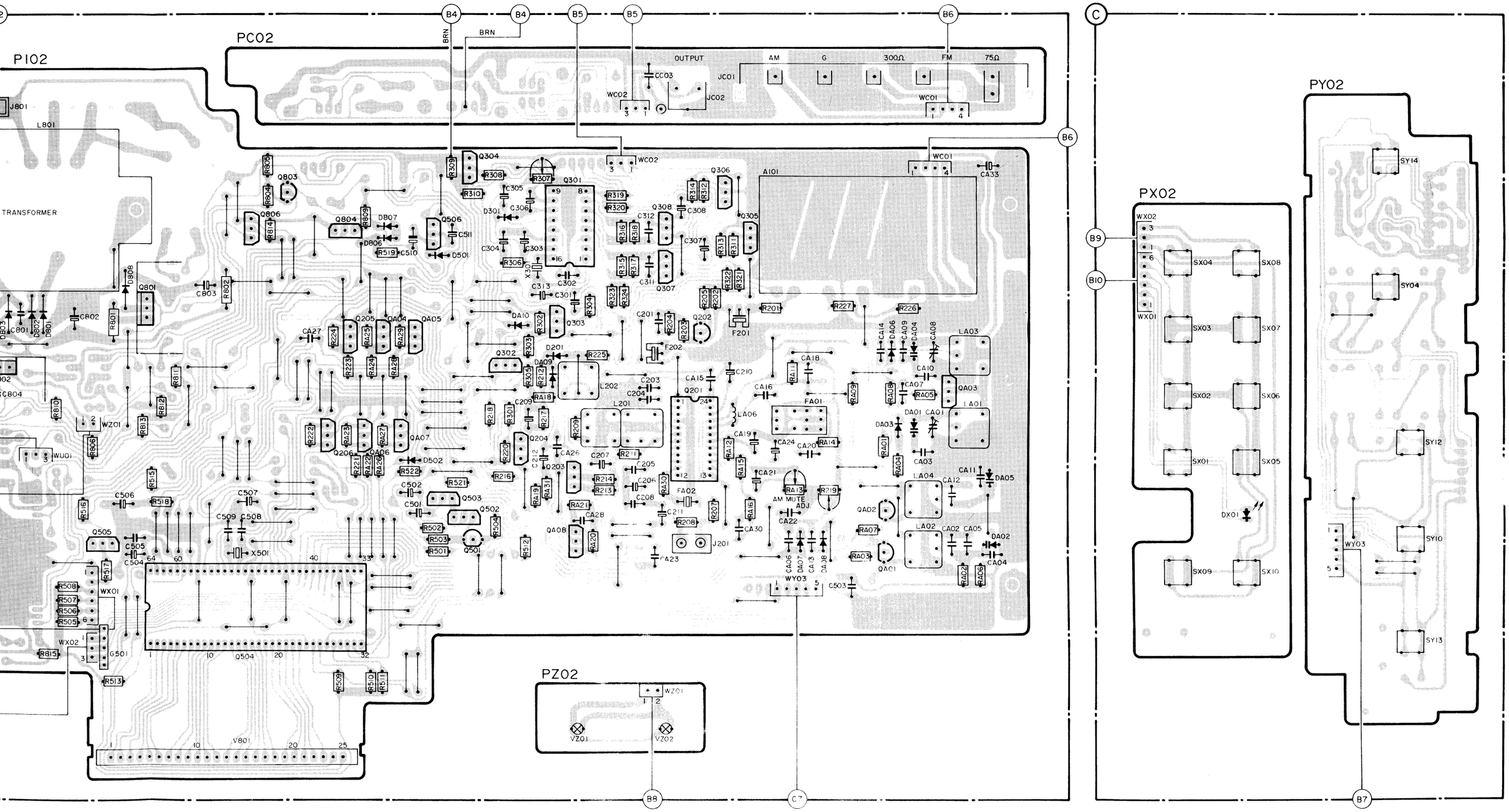
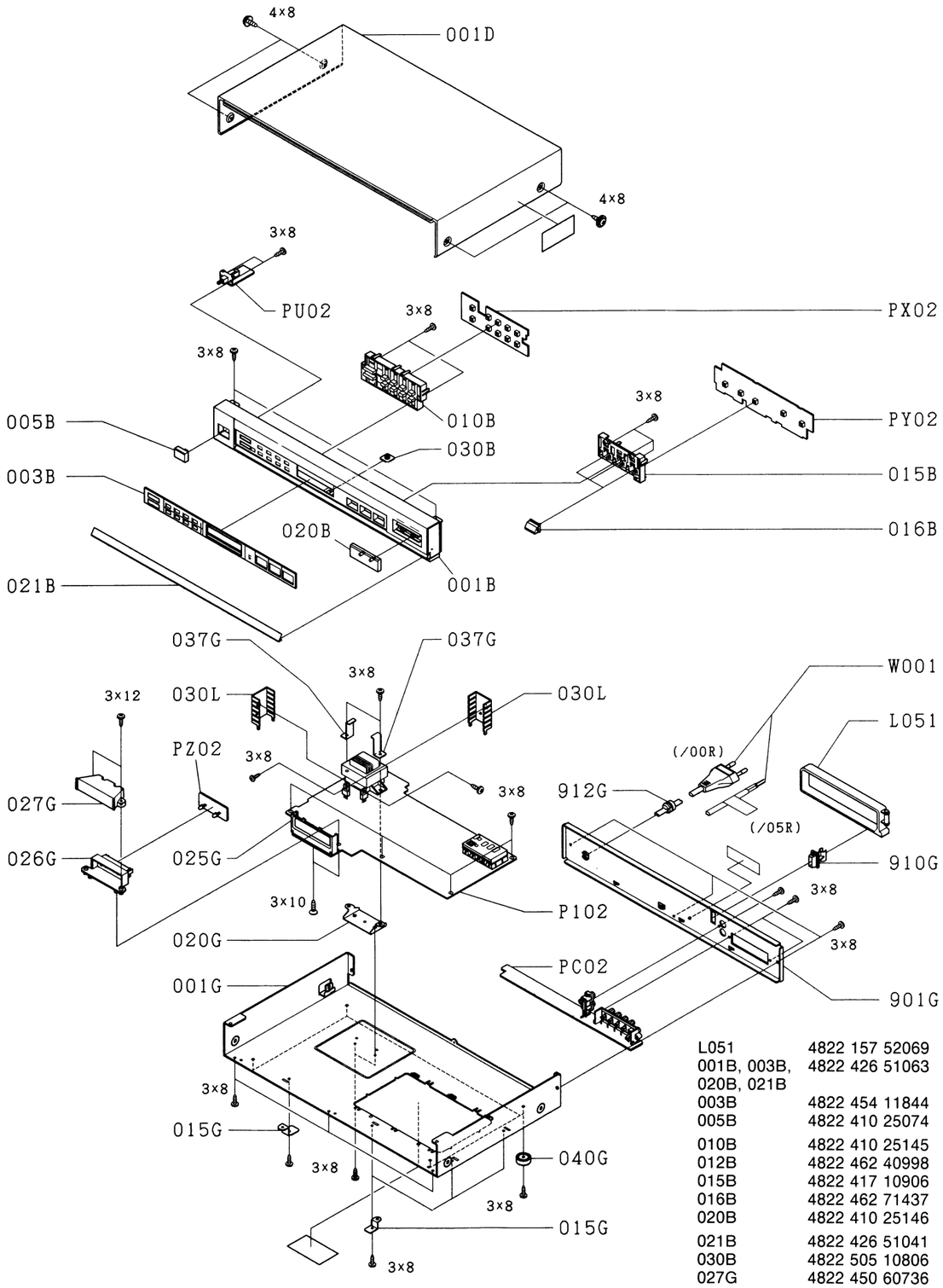
R810 R806 R801 R811 ~ R813 R802 R805 R804 R814 R221 ~ R224 R809 R519 RA22 ~ RA29 R306 ~ R310 RA18 R302 ~ R305 R225 R315 ~ R320 R323 R324 R311 ~ R314 R201 ~ R205 R321 R322 R227 RA01 RA04 R226 RA09 RA08 RA05	R - G
501 R815 R505 ~ R508 R516 R517 R513 R515 R518 R509 ~ R511 R501 ~ R503 R521 R504 R512 R281 R301 R220 R216 R217 RA19 RA31 RA21 RA20 R207 ~ R209 R211 ~ R214 RA30 RA11 ~ RA16 R219 RA07 RA03 RA02 RA06	
801 C802 C803 CA27 C510 C511 C301 ~ C306 C313 CC03 C312 C311 C308 C307 CA15 C210 CA30 CA16 CA19 ~ CA22 CA18 CA14 CA09 CA07 CA10 CA08 CA01 CA03 CA11 CA33	C
C504 ~ C506 C507 ~ C509 C502 C501 C209 C212 CA26 CA28 C211 CA23 C201 C203 ~ C208 CA24 CA06 CA13 C503 CA12 CA02 CA05 CA04	
Q505 D808 Q801 V801 Q806 Q803 Q504 Q804 Q205 Q206 QA04 ~ QA07 Q506 Q501 ~ Q503 Q304 Q302 Q303 Q204 Q203 QA08 Q301 D807 D806 D502 D501 D301 DA10 DA09 D201 VZ01 VZ02 Q305 ~ Q308 Q202 Q201 DA07 DA08 DA03 DA06 DA01 DA04 QA01 ~ QA03 DA02 DA05 DX01	Q - D - V
L801 X501 X301 L202 L201 F202 FA02 F201 LA06 FA01 LA04 LA02 LA03 LA01 SX01 ~ SX10 SY13 SY14 SY04 SY12 SY10	L - S - F - X



CS 3 406

EXPLODED VIEW



L051	4822 157 52069
001B, 003B, 020B, 021B	4822 426 51063
003B	4822 454 11844
005B	4822 410 25074
010B	4822 410 25145
012B	4822 462 40998
015B	4822 417 10906
016B	4822 462 71437
020B	4822 410 25146
021B	4822 426 51041
030B	4822 505 10806
027G	4822 450 60736
040G	4822 462 40971
910G	4822 256 90548
912G	4822 532 51314

CS 3 407

List of electrical parts

CA01	Trimming cap.	20 pF		4822 125 60104
CA02	Cap. film	390 pF	100 V	4822 121 42466
CA08	Trimming cap.	20 pF		4822 125 60104
C212	Elect-cap	0.1 µF	50 V	4822 124 21596
C501	Elect-cap	0.1 µF	50 V	4822 124 21596
C506	El. cap	47000 µF	5.5 V	4822 124 41265
C507	Elect-cap	0.1 µF	50 V	4822 124 21596
C511	Elect-cap	0.1 µF	50 V	4822 124 21596
C801	Cap. cer.	4700 pF	500 V	4822 122 32827
C804	Elect-cap	0.1 µF	50 V	4822 124 21596
G501	Cap-comp.	0.01 µF		4822 111 80328

RA13	Trimming res.	10K		4822 100 11041
RA32	Res. safety	100E	1/4 W	4822 111 30815
R219	Trimming res.	22 k		4822 100 20545
R307	Trimming res.	47 k		4822 100 11042
R529	Resistor	47E	1/4 W	4822 111 30006
R801	Fuse res.	10E	1/4 W	4822 116 60314
R802	Fuse res.	33E	1/4 W	4822 116 60293
R803	Fuse res.	5.6E	1/4 W	4822 116 60415

2SK30A Y1	4822 130 42121
2SA933 R, S	4822 130 42433
2SC536SP F, G	4822 130 42483
2SD1302 S, T	4822 130 42125
2SC829 C	4822 130 42135
2SD313 E	4822 130 41768
2SD863 E	4822 130 43377

LA1267	4822 209 70259
LA3410	4822 209 70261
MN1527KMA	4822 209 70258
NJM7812A	4822 209 70084

SVC321SP	4822 130 31542
1SR35-200A	4822 130 32816
1SS133	4822 130 33305
1SS135	4822 130 33679
GL-3HD5	4822 130 33151

FA01	Filter SFL450J3	4822 242 71509
FA02	Filter BFU450C	4822 242 71217
LA01	MW ant coil	4822 157 52328
LA02	MW osc coil	4822 157 52716
LA03	LW ant coil	4822 157 52714
LA04	LW osc coil	4822 157 52717
LA06	Choke coil 39 MH	4822 152 20595
LC01	Choke coil 102 k	4822 152 20607
LC02	Choke coil 102 k	4822 152 20607
F201	Filter SFE10.7MS3-A	4822 242 71135
F202	Filter SFE10.7MS3-A	4822 242 71135
L201	I.F.T FM det coil	4822 157 52715
L202	M.P.X. coil	4822 156 10794
L801	Transformer	4822 148 80655
X301	CSB456F11 456 kHz	4822 242 71511
X501	Crystal 4.5 MHz	4822 242 71407

Miscellaneous

A101	V.H.F. tun. FE407-G23	4822 210 10267
JC01	Din ant terminal	4822 267 10133
JC02	Tun. output terminal	4822 267 30741
L051	AM loop ant	4822 157 52069
SU01	Push switch power	4822 276 11682
SX01	Push switch preset 1	4822 276 11559
SX02	Push switch preset 2	4822 276 11559
SX03	Push switch preset 3	4822 276 11559
SX04	Push switch preset 4	4822 276 11559
SX05	Push switch preset 5	4822 276 11559
SX06	Push switch preset 6	4822 276 11559
SX07	Push switch preset 7	4822 276 11559
SX08	Push switch preset 8	4822 276 11559
SX09	Push switch memory	4822 276 11559
SX10	Push switch FM mode	4822 276 11559
SY04	Push switch tun down	4822 276 11559
SY10	Push switch MW	4822 276 11559
SY12	Push switch FM	4822 276 11559
SY13	Push switch LW	4822 276 11559
SY14	Push switch tun. up.	4822 276 11559
VZ01	Lamp 12 V 0.1A	4822 134 40745
VZ02	Lamp 12 V 0.1A	4822 134 40745
V501	LCA7B8031A	4822 130 90351